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ATTENTION:	Examiner: <u>Hong Chong KIM</u>	
	Art Unit: <u>2186</u>	

FROM:	TELEPHONE NO.:
Michael J. Ure, Reg. No. 33,089	(408) 474 - 9077
RE:	Serial No.: <u>09/829,793</u>
	Attorney Docket No.: <u>NL000215</u>

TRANSMISSION INCLUDES:

13 Pages (including cover sheet)Transmittal of Brief In Support of An Appeal - 1 pageAppeal Brief - 11 pages

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Philips Electronics North America Corporation
1105 McKay Drive, MS-41
San Jose, CA 95131Tel: (408) 474-9066
Fax: (408) 474-9080

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCESRECEIVED
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First-Named Inventor: Martijn J. L. EMONS
Application No.: 09/829,793 Conf.: 1893
Date Filed: 04/10/2001
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Atty Docket No.: NL000215
Art Unit: 2186
Examiner: Kim, Hong Chong

Title: CACHE INTERFACE CIRCUIT FOR AUTOMATIC CONTROL OF CACHE
BYPASS MODES AND ASSOCIATED POWER SAVINGS

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TRANSMITTAL OF
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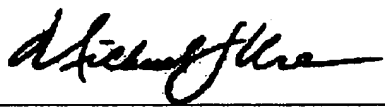
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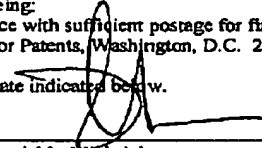
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PHILIPS ELECTRONICS NORTH AMERICAN CORP.

By


Michael J. Ure, Reg. No. 33,089
1109 McKay Drive, M/S-41SJ
San Jose, California 95131
(408) 474-9077

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re the Application

Inventor : **Martijn J.L. Emons**
Application No. : **09/829,793**
Filed : **April 10, 2001**
For : **CACHE INTERFACE CIRCUIT FOR AUTOMATIC
CONTROL OF CACHE BYPASS MODES AND
ASSOCIATED POWER SAVINGS**

APPEAL BRIEF

On Appeal from Group Art Unit 2186

Date: November 8, 2005

By: Michael Ure
Attorney for Applicant
Registration No. 33,089

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Daniel Michalek
(Name)

(Signature and Date)

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RELATED PROCEEDINGS

EVIDENCE

TABLE OF CASES

NONE

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I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the present application, Koninklijke Philips Electronics N.V., and not the party named in the above caption.

II. RELATED APPEALS AND INTERFERENCES

With regard to identifying by number and filing date all other appeals or interferences known to Appellant which will directly effect or be directly affected by or have a bearing on the Board's decision in this appeal, Appellant is not aware of any such appeals or interferences.

III. STATUS OF CLAIMS

Claims 6-8 are pending, stand finally rejected, and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

All amendments have been entered. No amendment after final rejection has been submitted.

V. SUMMARY of the CLAIMED SUBJECT MATTER

The present invention relates to a data processing arrangement for achieving substantial power savings.

A cache memory is used to speed processor operation. A cache memory, however, consumes significant power. The present invention provides for a cache bypass

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mode, *under programmer control*, in which the cache memory is turned off, saving power. Because entry of cache bypass mode is under programmer control, the programmer can ensure that processing speed is less critical than power savings for code sections that are executed during cache bypass mode (Specification, page 2, lines 3-15).

Independent claim 6 relates to a cache interface circuit including a processor interface for receiving memory access requests from a processor, and for transmitting memory data back to the processor in response to processor requests, and a main memory interface for issuing main memory access requests to a main memory and for receiving main memory data in response. A cache memory interface is provided for issuing memory access requests to a cache memory, if operating in a cache mode, and for receiving cache memory data in response. A cache-bypass mode-control signal input for the processor is used to indicate a cache bypass mode in response to a programmer instruction inserted in a program being executed by the processor *explicitly for the purpose of switching to cache bypass mode*, in which cache bypass mode memory access requests are serviced from the main memory. A power control output is provided for switching off operating power to the cache memory in response to a command received at the cache-bypass mode-control signal input that indicates all memory access requests should be serviced from the main memory.

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VI. GROUNDS of REJECTION to be REVIEWED ON APPEAL

The issues in the present matter are whether:

1. claims 6-8 are unpatentable over Fuller, or unpatentable over Fuller in view of Yamahata.

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Serial No.: 09/829,793**VII. ARGUMENT****I. Rejection of Claims 6-8 as Being Unpatentable over Fuller or
Fuller in view of Yamahata**

As noted previously, A distinguishing feature of the present invention as set forth in claim 6 is the ability of a processor to itself control whether or not the processor's cache is bypassed, enabling the cache to be switched off for power savings. Note in particular the fourth element of claim 6, reciting "a cache-bypass mode-control signal input for said processor to indicate indicate a cache bypass mode in response to a programmer instruction inserted in a program being executed by said processor explicitly for the purpose of switching to cache bypass mode."

In Fuller, by contrast, the programmer does not have any such control. Rather in Fuller, a power management unit, in response to a *fixed control program*, determines whether or not cache-bypass mode will be entered (Fuller, Fig 2; note element 65). Fuller therefore does not anticipate the present invention.

Furthermore, in Yamahata, cache-bypass mode is inferred from selected instructions as made clear in col. 2 thereof, i.e., IN or OUT instructions, STRING instructions, PRIVILEGE instructions, TASK SWITCHING instructions, or SEMAPHORE DATA operation instructions. Such a mechanism remains inflexible compared with the claimed invention.

There is no teaching or suggestion in the cited references of "a cache-bypass mode-control signal input for said processor to indicate indicate a cache bypass mode in response to a programmer instruction inserted in a program being executed by said processor explicitly for the purpose of switching to cache bypass mode."


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Accordingly, claim 6 and its dependent claims are believed to patentably define
over the cited references.

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Serial No.: 09/829,793**VIII. CONCLUSION**

In view of the above analysis, it is respectfully submitted that the referenced teachings, whether taken individually or in combination, fail to anticipate or render obvious the subject matter of any of the present claims. Therefore, reversal of all outstanding grounds of rejection is respectfully solicited.

Date: November 8, 2005


By: Michael Ore
Attorney for Applicant
Registration No. 33,089

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IX. APPENDIX: THE CLAIMS ON APPEAL

6. A cache interface circuit, comprising:

a processor interface for receiving memory access requests from a processor, and for transmitting memory data back to said processor in response to processor requests;

a main memory interface for issuing main memory access requests to a main memory and for receiving main memory data in response;

a cache memory interface for issuing memory access requests to a cache memory, if operating in a cache mode, and for receiving cache memory data in response;

a cache-bypass mode-control signal input for said processor to indicate a cache bypass mode in response to a programmer instruction inserted in a program being executed by said processor explicitly for the purpose of switching to cache bypass mode, in which cache bypass mode memory access requests are serviced from said main memory;

a power control output for switching off operating power to said cache memory in response to a command received at said cache-bypass mode-control signal input that indicates all memory access requests should be serviced from said main memory.

7. The cache interface circuit of Claim 6, further comprising:

a cache-bypass mode program instruction interceptor connected to the processor interface and providing for switching between said cache and cache-bypass

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modes without having received an explicit signal to do so at the cache-bypass mode-control signal input;

wherein, said processor need not take any action to switch between said cache and cache-bypass modes.

8. The cache interface circuit of Claim 7, further comprising:

a sequence of program instructions disposed in said main memory that require execution by said processor in said cache mode and that are bracketed by program instructions acted on by the cache-bypass mode program instruction interceptor to switch between said cache and cache-bypass modes.

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X. APPENDIX: RELATED PROCEEDINGS

NONE

XI. APPENDIX: EVIDENCE

NONE